

## COMMITTEE GIVES FINAL REPORT ON WALKER CAFETERIA

Offer Numerous Suggestions As  
Well As Criticisms In  
Their Findings

### FIVE MEN ON COMMITTEE

Containing numerous suggestions and criticisms, the report of the Walker Investigation Committee was submitted to the Institute Committee at its meeting yesterday in the West Lounge of Walker. In general, opines the committee, the equipment used in preparing the food is modern and of the first quality.

Covering a period of four weeks, the committee surveyed the general conditions in the cafeteria and based their final opinion on four points. Members of the inquiry group were given the privilege of eating twenty meals per week, making out a report after each meal. A final meeting was held on November 9, when Mr. Horace S. Ford, Bursar, Mr. Albert W. Bridges, Director of the Dining Service, and Mr. W. Carlisle, discussed the findings of the committee which are set forth below.

#### Findings of the Committee

The source of the suggestions and criticisms made by the committee are the following:

1. Personal observation.
2. Questionnaires.
3. Comparison with other Cafeterias.
4. Suggestions of individuals interested in the Cafeteria.

The suggestions and criticisms overlap to a certain extent, but I have separated them in an arbitrary manner as follows:

#### SUGGESTIONS

1. Have a choice of milk or a five-cent dessert, instead of soup on the specials.
2. Lower the price of the salads so as to provide a cheap salad for those who desire it (Ex.—head lettuce.)
3. Have larger portions of ice cream for the money.
4. Inspect the silver, glassware and dishes before they are used.
5. Better and faster service during rush hours.

(Continued on page four)

## Hexathlon Event Is Scheduled For Track Tomorrow

Six-Event Competition Will Be  
Held Instead of Usual  
Handicap Meet

Coach Oscar Hedlund, varying the usual form of his Saturday afternoon handicap meets, has organized a hexathlon competition for tomorrow afternoon at 2:30 o'clock. All Institute track men are eligible to compete in the contest, which consists of three running events, one jump, and two weight events.

The events which Coach Hedlund has chosen to make up the six are the 100-yard dash, 440-yard run, and three-quarter-mile run, running high jump, discus throw, and twelve-pound shotput. Thus the winner of a competition of this type, though not necessarily outstanding in any one event, must be a good all-around performer.

Scoring in the hexathlon will be done as in cross-country meets; that is, the winner of the event is charged with one point, the runner-up with two, and so on.

Track men will be interested to hear that an arrangement has been made to have a radio in the Track House tomorrow afternoon, so that

(Continued on page four)

### Class of 1936 Officers

President—Phillip G. Briggs.  
Vice-President—  
Malcolm A. Blanchard  
Secretary—William B. du Pont  
Treasurer—Ford M. Boulware  
Institute Committee—  
Robert F. Driscoll  
Stanley T. Johnson  
Executive Committee—  
John L. Hegeman  
Michael A. Kuryla

#### ALTERNATES

President—John R. Graham  
Vice-President—Robert K. Wead  
Secretary—C. Donald Brown  
Treasurer—William R. Saylor  
Executive Committee—  
1st—Edgar C. Rust  
2nd—William M. Benson  
Institute Committee—  
1st—T. L. Matthews  
2nd—Harry Easton, Jr.

#### Junior Prom Committee

1. Henry D. Humphreys
2. Henry Eagan
3. Charles H. Lucke
4. E. Phillip Kron
5. Edward P. Bromley

#### ALTERNATES

- 1st—G. Kingman Crosby
- 2nd—Francis S. Doyle

## MANY MEN REPORT FOR HOCKEY SQUAD

Over Thirty Candidates Turn  
Out for Every Practice  
At Boston Arena

Technology's hockey season is successfully getting under way at the Boston Arena, and Coach Vic Duplin reports that the attendance has been very satisfactory. Over thirty men have reported at each of the last five practices, even though the sessions are held from 6:45 to 7:45 o'clock each morning.

It was expected that the team would suffer considerably from the loss by graduation of Captain Tom Regan, Dick Cochrane, and Joe Fahey, the entire first-string forward line, and of Don Whiston at goal; but Coach Duplin believes that the members of last year's freshman team, and certain players who were ineligible then, will at least compensate for them.

#### Eight Veterans Report

Members of last year's varsity who have reported include Captain John Hrones, Frank Milliken, Fred Johnson, Roger Williams, Bernard Lucy, Hal Reynolds, Jim Hayes, and George Stilroe. Milliken has developed into a good goalie, and should fill Whiston's place very well. Hrones will be remembered for his stellar work of last year on the defense.

Sophomores of promise include Jack Carey, Mort Jenkins, Dave Mathias, Edward McCarren, and George Forsburg; while last season's ineligibles are ably represented by Eddie Sylvester and George McCaulley, who were transfers. Sylvester is a player of exceptional promise and bids fair to be outstanding.

#### Duplin Expresses Confidence

Coach Duplin expects to put a well-balanced team on the ice, and one which will be on a par with the teams in its class.

The freshmen have yet to go on the ice. They have been practicing stick-handling in the Hangar Gym. All freshmen are urged to try out for the team. Practice is on Saturday afternoons from one to three o'clock. Games have been arranged with Andover, Exeter, St. John's Prep, and the Brown freshmen, while others are being sought with the Boston University and Northeastern first-year skaters.

## CHAIRMAN OF R.F.C. SPEAKS TO CORP XV

Senator Pomerene Confident Of  
Country Returning To  
Normalcy

Emphasizing the country's need of courage and confidence in these times of financial difficulties, Senator Atlee Pomerene, chairman of the Reconstruction Finance Corporation, yesterday spoke to Corporation XV in Room 1-190.

He pointed out the great successes which have accompanied the creation of the Reconstruction Finance Corporation, largest corporation of its kind in the world. Stock in this country was sold to the extent of five million dollars and today the company has a potential capital of 3,800,000,000 dollars, or more than any other bank outside America except those of England and France.

Senator Pomerene gave a detailed account of how the company was conceived and created by the joint efforts of President Hoover and Congress. The corporation makes no direct loans to private individuals said Senator Pomerene but has worked out a system of indirect lending calculated to help those needing financial aid.

Because this country has such great natural resources, he said, he is confident that it will soon emerge from its present financial crisis. In helping to end the depression more than ninety percent of the country's banks are doing all they can to help their respective communities.

In a tirade against inactive banks, Senator Pomerene condemned the actions of those banks which, having liquid assets amounting to more than seventy-five percent of their capital, were not making loans.

## BATON SOCIETY WILL HOLD CLOSED DANCE

Conducting a closed, informal dance tomorrow evening, the Baton Society, honorary society of the Combined Musical Clubs, will dance in North Hall of Walker Memorial while the Technicians play. Only members of the society, with their friends, will be allowed admission, the charge being fifty cents per couple.

### Alarm Ringing Disturbs Slumber In 8.03 Lecture

Some one of the many brilliant engineers at the Institute has found a way to combat that most insidious enemy to high ratings, class (un)consciousness. It all happened the other day in 8.03 lecture. The hour was about 2:30, and tired Sophomores were just beginning to give up their attempts to remain awake; the lecturer was droning on about magnetic theory and compass needles. Suddenly the strident tones of an alarm clock penetrated the nodding heads. Eyes flew to the rear of the room, where an expanse of empty seats testified that other than human agencies created the disturbance. There was a brief respite from magnetism until the lecturer recovered his poise and went on with his talk. The ringing gradually fell from a full-throated discord to a tinkling murmur and finally ceased altogether, while a not so subdued chorus of snickers gave evidence to the fact that the heroic efforts of the alarm had not gone unappreciated.

## BRIGGS BECOMES PRESIDENT OF FRESHMEN AS BLANCHARD IS ELECTED VICE-PRESIDENT

### PRESIDENT OF FRESHMEN



PHILLIP G. BRIGGS

### VAIL COLLECTION GETS EDISON BOOK

Margin Notes In Thomas Edison's  
Hand Distinguish Volume

Thomas A. Edison's son, Charles, '13, has presented to the Institute an annotated volume from the library of his father. The book is a copy of Paul Sabatier's "Catalysis in Organic Chemistry", translated into English by E. Emmet Reid.

Numerous underscorings and a marginal comment in Mr. Edison's handwriting are considered particularly significant in the light of the scientist's interest in organic chemistry during the latter years of his career. He devoted much effort at this time to the search for new methods of producing plant rubber.

Sabatier, author of the volume, was awarded the Nobel prize in chemistry in 1912, and in 1915 received the Davy medal of the Royal Society of London.

The following annotation by Mr. Edison occurs in an extension of the theory of catalysis by Professor Wilder D. Bancroft, chairman of the Committee on Catalysis of the National Research Council, which was added to the book by the translator:

"Perhaps it's the striking of the light molecules against the comparatively large mass of the catalyzer produces heat; the catalyzers being finely divided, don't conduct readily — it's like Welsbach mantle which if dense is N. G."

The volume, in a morocco case marked "From the library of Thomas A. Edison", will be added to the Rare Book Collection of the Vail Library.

Autograph letters from Mr. Edison and from the Edison medalists are also being collected in the Institute library. There have been 21 recipients of this award, considered the highest honor in electrical engineering in this country.

### QUADRANGLE CLUB ACTS ON TIE QUESTION

Definite action concerning the freshman tie question was taken by the Quadrangle Club at its meeting last Wednesday evening, but it will not be made public for at least a week, according to Cason Rucker.

The club has planned to have a meeting with some of the freshman class on December 6. The basement of Walker Memorial will be hired so that the guests may bowl and play pool.

## PROM COMMITTEE MEMBERS CHOSEN BY JUNIOR CLASS

Humphreys, Eagan, Lucke, Kron  
and Bromley Chosen To  
Arrange Prom

### BOULWARE, TREASURER

Phillip G. Briggs was chosen president of the freshman class in the elections held last Thursday in conjunction with the Junior Prom Committee elections; Malcolm A. Blanchard was elected vice-president; William B. du Pont, secretary; and Ford M. Boulware, treasurer. John L. Hegeman and Michael A. Kuryla were chosen to represent the class on the Executive Committee, and Robert F. Driscoll and Stanley T. Johnson were elected to the Institute Committee.

The Junior Prom election results show that Henry D. Humphreys, Henry Eagan, Charles H. Lucke, E. Phillip Kron, and Edward P. Bromley will comprise the committee this year.

#### Briggs From Massachusetts

Briggs, the freshman president, comes from Rehoboth, Mass. He attended the St. Georges School in Newport, R. I., where he took part in football and worked on the crew. Before coming to the Institute he worked for two summers with Dr. Wilfred Grenfell, who was doing medical work in native villages in Labrador. Briggs is on the freshman crew, and a member of Delta Kappa Epsilon.

The class vice-president, Malcolm Blanchard, is the son of Professor Blanchard of the Chemistry Department. He comes from Brookline where

(Continued on page four)

## Civil Engineers Hear Lecture On E. Boston Tunnel

Mosher Speaks On Problems In  
Driving East Boston  
Tunnel

An informal dinner and an informative talk on tunneling featured the first monthly get-together of the Civil Engineering Society. The speaker was R. E. Mosher, engineer for the Boston Transit Company, who has been on the construction work of the Boston vehicular tunnel since its beginning.

After the dinner, which was held in Walker Memorial last night, Douglas M. Stewart, '33, president of the society announced the results of the recent elections. The new officers are: John Brunner, '34, assistant secretary; Robert Emery, '34, assistant treasurer, and M. J. Bernstein, '34, executive committee.

Mr. Mosher's talk, after the dinner, contained a wealth of practical information, and was well illustrated with slides and diagrams. He described the many processes of tunneling, from the early surveys to the final paving of the underground roadway. Many problems which come up in the course of tunneling are foreign to ordinary engineering, and they must be solved by the engineers on the job before work can proceed. Obstacles are frequent, and ingenuity is an asset, if not a requirement, for a tunneling engineer.

(Continued on page three)

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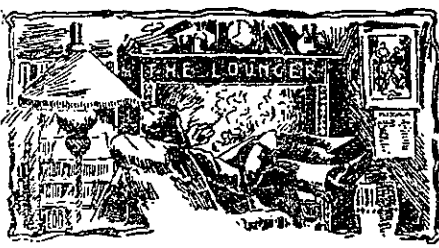
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Now that *Voo Doo* has come right  
out in the open and is casting about  
to give its readers, few as they are, a  
few shots in the dark concerning the  
identity of the Lounger, we have taken  
to laughing inordinately up our right  
and left sleeves, alternately.

Doubtless you have heard of the  
trivial and inconsequential efforts  
made on the part of the *Voo Doo* staff,  
small as that is, to approach the style  
of the Lounger, using of course, modi-  
fications of old situations previously  
discovered and worked up by this col-  
umn.

We smell a strong smell. It grows  
stronger. Yes, just as we thought.  
Billy Mills, the boy wonder, Bobby  
Henry, the child humorist, and Barna-  
cle Bill Havens, are producing more  
of their screaming wit. Lord knows  
its bad enough to have the Lux fac-  
tory and Page & Shaw upwind from  
the Institute without this dread tri-  
umvirate with their wind up, and the  
Hammers of Hell flying.

Unfortunately, this column is writ-  
ten a full day before the paper goes  
to press, which leaves one lightly  
up in the air as concerns current  
events. However, we do wish to draw  
the attention of our dear, dear readers  
to the signs on the bulletin boards,  
displayed just before the election.

These read as follows, "Freshmen,  
are we men, or pansies?" No more.  
Undoubtedly these were placed in  
public view for only one purpose, that  
of creating an unsympathetic atti-  
tude as regards the candidacy of Miss  
Hunter. And whether the Institute  
Committee will choose to investigate  
or not, this shows, fairly conclusively,  
that the freshmen are really just a  
bunch of geraniums, slightly potted.

And while we are on the subject of  
the prominent coed, perhaps you will  
call to mind the brief interview pub-  
lished Monday, in which she expressed  
a desire to use the gymnasium.

In reply to this, we have the letter  
of Ivan A. Getting, Captain of the  
gym team, telling Miss Hunter that  
it's O. K. by him for her to come  
around almost any time at all. In  
spite of the fact that that may look  
just down-right noble to some, it looks  
more like an excellent dare to the  
flashing Miss. We wonder, just sup-  
posing she might take that up, who  
would be the more embarrassed, the  
brawny he-men, or the shrinking coed.

Found in the morning's mail is the  
quaint piece of dramatic art, which  
we have inserted below. We have al-  
ways felt the need of a writer with  
ideas like these, and wish he'd come  
around and bat off a few for us, just  
any old time at all.

Scene: A desert place.  
Time: Evening of commencement  
day.

(From left stage enters a wild,  
disheveled figure in cap and gown. He  
is crouching low, mutters, and con-  
stantly stops to caress a package  
which he has under his arm. His  
mutterings finally become audible.)  
"Ha-ha! Revenge! Four years of  
this and now revenge! As a fresh-  
man I suffered; as a Sophomore I  
was tortured; as a Junior I suffo-  
cated; as a Senior I writhed; but now  
all is different. As a graduate, a  
free man, heh heh, all will come to  
an end!"

(Stops to shake fist at large build-  
ing, right stage. Takes several sticks  
of dynamite from package and places  
them at foot of building, meanwhile  
gibbering and laughing inanely. Un-  
winds fuse, lights it, and retreats to  
safe distance, where he crouches with  
a leer on his face.)  
"Heh, heh, (Shakes fist.) For four  
long years I've endured you. Now it  
is my turn. Ya-ha-ha!"

(Suddenly there is a deafening roar,  
the building right stage collapses, and  
the figure in cap and gown falls to the  
ground convulsed with mirth.)  
"Ho-ho-ho-ha-ha-he-he!"  
"NO MORE LUX SOAP!"

Research On Cavitation Conducted  
In Hydraulics Lab. By Institute Men

Pitting Effects Are Studied;  
Glass Plate Marred In  
Half An Hour

Cavitation is a phenomenon of  
some importance industrially. Hy-  
draulic turbines, centrifugal pumps,  
propellers of ships, and other revol-  
ving parts, and stationary parts also,  
of hydraulic apparatus, are subject to  
its insidious effects.

It occurs only at relatively high  
speeds of the liquid. With a large  
speed relative to the surface of the  
containing vessel a liquid will no  
longer hold to the walls of the cham-  
ber. Wherever the curvature of the  
boundary walls is convex the liquid  
will tend to fly from the surface as it  
passes the convex portion, due to cen-  
trifugal force. For instance, if the  
oceans of the Earth assumed greater  
and greater velocities around the  
Earth, the pressure of gravitation  
would no longer be sufficient to retain  
them and they would fly bodily into  
space.

But in a closed circuit the liquid  
cannot continue in a straight line for-  
ever. Back pressure tends to return  
the flow along the side walls, thus  
forming eddies between the point at  
which the liquid leaves the surface of  
the container and the point at which  
it returns to it, where a hole in the  
flow, or cavity, is formed. From this  
phenomenon comes the term cavi-  
tation.

Professor Wilhelm Spannhake of  
the Institute Department of Mechani-  
cal Engineering, and his associates,  
Dr. H. Peters, E. W. Spannhake, '33,  
and J. K. Vannard, '30, have mea-  
sured the pressure in these cavities as  
it approaches absolute zero. There is  
only water vapor pressure and the  
partial pressure of the released gases  
to prevent the formation of a perfect  
vacuum.

The Professor is in charge of re-  
search now visible to anyone who will  
take the trouble to look at it. The  
tank, surrounded by a platform, in the  
hydraulics laboratory, is part of the  
apparatus. The essential portion is a  
Venturi section through which  
water is forced at a high speed. Two  
pumps arranged so that they may be  
run either in series or in parallel, or  
separately, cause the flow of liquid.  
These pumps are in the basement of  
Building Three.

The water flows up into the tank,  
from there through the Venturi sec-

tion and back to the pump. The Ven-  
turi section may best be visualized  
by conceiving a square pipe, at one  
point of which only two opposite  
sides approach each other in a "V"  
formation, but without sharp edges.  
This makes a constriction in the pipe  
and at the same time leaves two of  
the sides plane surfaces.

This apparatus is used to deter-  
mine the effects of pitting, the detri-  
mental result of cavitation. In the  
ship propellers, turbines, and other  
hydraulic mechanisms in which cavi-  
tation occurs, it has been observed  
that at the high pressure end of the  
cavity the metal actually wears away.  
This goes on until the machine has

(Continued on page four)

Amusements

STAGE

"Walk a Little Faster" — Opening tonight  
at the Majestic. New musical revue including  
Beatrice Lillie, Clark and McCullough. Score  
by Vernon Duke.

"No Money to Guide Her" — At the Wilbur  
beginning Monday. New comedy from the pen  
of Romney Brent.

"The Chillingtons" — At the Hollis, beginning  
Monday. A new English comedy, with an  
all-English cast.

"Whistling in the Dark" — At the Plymouth.  
A lively gangster comedy, with capable acting  
by Ernest Truex as the center.

"Face the Music" — At the Shubert, opening  
Tuesday. Irving Berlin's new musical comedy  
revue, with a cast including Mary Boland and  
the Albertina Rasch girls.

SCREEN

RKO-Keith — "The Conquerors", an Ameri-  
can epic romance with Richard Dix and Ann  
Harding.

Keith-Boston — Jack Holt in "Man against  
Woman". Plus a stage revue, "Spain", and a  
Clark McCullough comedy.

Metropolitan — "Evenings for Sale", with  
Herbert Marshall. Stage production including  
Art Jarrett, Gilda Gray, Roy Cummings.

State and Orpheum — Marie Dressler and  
Polly Moran, famous comedy pair, in "Pro-  
perity".

Paramount and Uptown — "I am a Fugitive  
from a Chain Gang", southern prison-closter  
thriller, starring Paul Muni. Held over for  
another week.

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## BOOTERS FACE CLARK TEAM IN FINAL GAME

### Play Last Match of Season On Coop Field Tomorrow

Closing a season featured by a streak of hard luck, the Technology soccer team plays its last 1932 game with Clark University at the Coop Field this Saturday. According to Coach Goldie, the players deserve plenty of credit for their showing, even if the season was unsuccessful, because of the handicaps they have. Their late and short practices, the difficulty in getting the team together at one time, together with the fact that it has been getting dark just as the men get out of classes, stated the coach, prevents the type of team that most colleges can develop; but even with these difficulties the team's defeats have not been overwhelming. They lost the Brown game in an overtime period, Dartmouth won by one point, and a strong Army team was held to five points against Technology.

Coach Goldie went on to say that he believed the team would conquer Clark, as spirit is still visible from the Harvard game last Saturday, and especially since this is the last game of the season.

In describing next year's material, the coach said that with only two men, Captain Kiddé and Moore, graduating, and with material like Hamilton, this year's freshman captain, moving up, prospects for the 1933 season are particularly bright.

## TECHNIQUE PICTURE SCHEDULE READY

Group pictures for Technique will be taken on the second floor of the Coop Building on Monday and Tuesday. On Monday morning, November 21, the following groups will have their pictures taken, each group being taken at ten minute intervals in the order given. Beginning at 8:10 A. M., Walker Memorial Committee, Budget Committee, Benchmark (managing board), and Chemical Society. Then at ten minute intervals beginning at 5:10, the Combined Professional Societies, Varsity Soccer Team, Freshman Soccer Team, Varsity Cross Country Team, Freshman Cross Country Team and Dormitory Committee.

On the following day beginning at 8:10 in the morning, Electrical Engineering Society (officers), Society of Automotive Engineers (officers), THE TECH staff, Interfraternity Conference (officers), and Tech Catholic Club. In the afternoon, commencing at 5:10, Mechanical Engineering Society (officers), Technique staff, Sedgwick Biological Society, T. C. A., T. E. N., and Voo Doo staff.

Individual portraits will be taken between 9 and 5 on November 21 and 22 at the same location. No appointment will be necessary.

Senior proofs may be obtained in the Main Lobby today.

## Members Of Mining Society Hear Talk

### Professor F. K. Morris Speaks On "Earth As Engineering Structure"

Before a gathering of about 30 potential miners, Frederick K. Morris, professor of Structural Geology, spoke on "The Earth as an Engineering Structure". The speaker was introduced by Vice-President Preben Oldenburg, at the dinner, which was held in Walker Memorial last night.

Professor Morris gave a well-constructed and interesting talk, dealing with the mechanics of the earth. The lecture may be summed up in the speaker's own words:

"All movements of the earth's crust are orderly, efficient and successful; and the continents, oceans, mountains, and volcanoes are the graceful expression of good engineering."

An entertainment committee, consisting of Lyman Allen and Robert Tripp performed a few feats of "magic", and the evening was successfully concluded.

### Wandering Greeks

Wandering Greeks will have their last chance to sign up in the books hanging in the corridors today. At 5:00 P. M. the sign-up books will be taken down.

## CIVIL ENGINEERS HEAR LECTURE ON TUNNEL

(Continued from page one)

### Describes Driving of Shield

Mr. Mosher went into great detail on the matter of driving the tunnel through. This operation is accomplished with the aid of a giant shield, which, contrary to general opinion, does not bore through the earth, but is pushed ahead by hydraulic jacks. As the shield goes forward, displacing large quantities of the river bed, the space behind it is filled in with a concrete and steel filler, which forms the base of the tunnel, and withstands the terrific pressure of the water and mud above.

During the lecture many questions were answered by the speaker, as the

members of the society took advantage of the opportunity to gain first hand information on the subject. It was voted an enjoyable and instructive evening.

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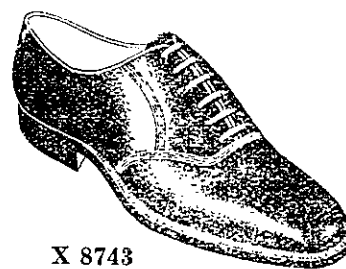
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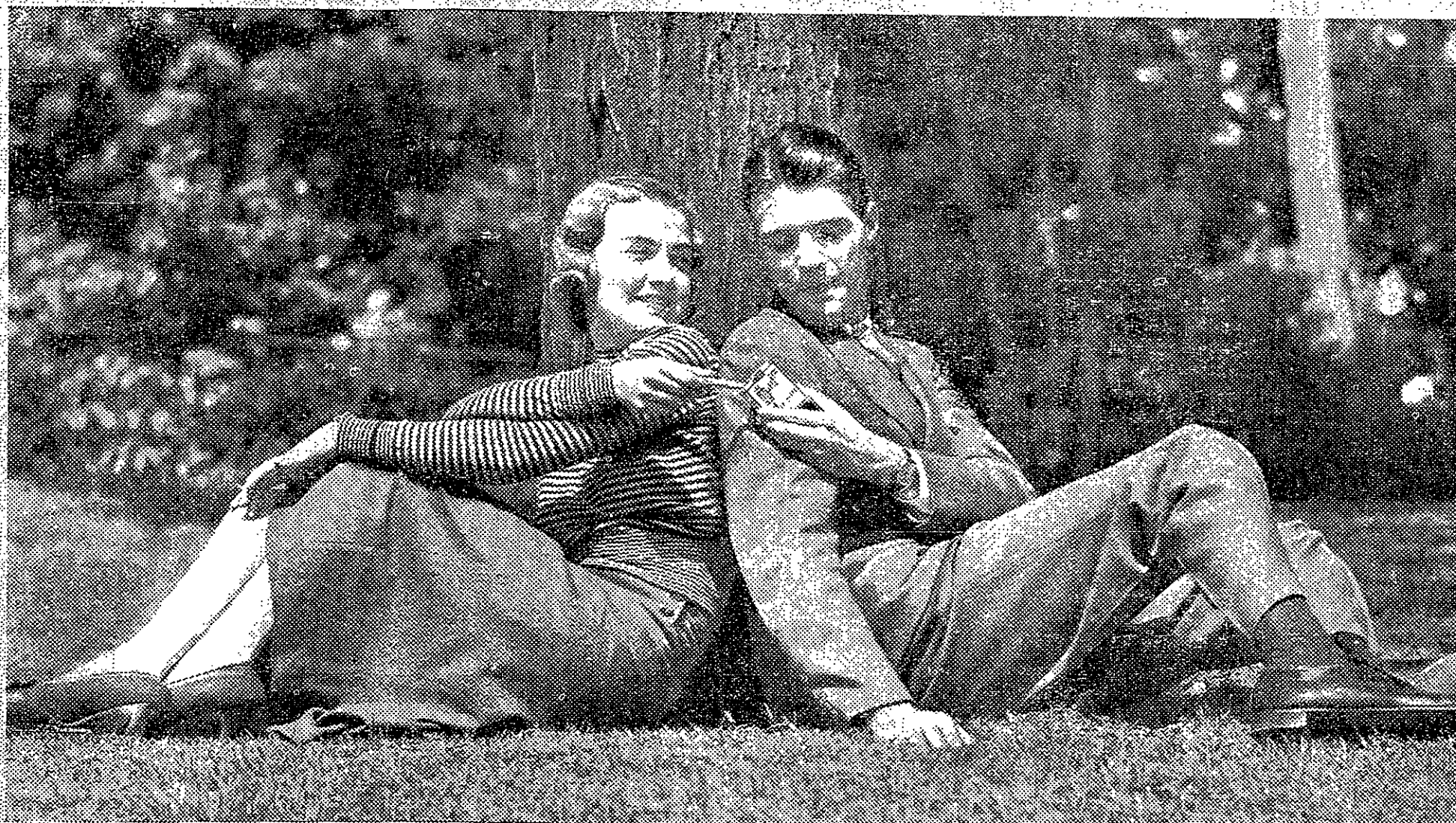
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# CALENDAR

Friday, November 18

9:00 P. M. — Dorm Dance, Main Hall, Walker Memorial.  
9:00 P. M. — Chinese Student Club Meeting, Faculty Dining Room, Walker Memorial.

Saturday, November 19

10:00 A. M. — Tech-Simmons Deputation Team Discussion Meeting, Faculty and Alumni Room, Walker Memorial.  
1:00 P. M. — Hockey Team Practice, Hangar Gym.  
5:30 P. M. — Boston Bacteriological Society Dinner, Faculty Dining Room, Walker Memorial.  
6:00 P. M. — M. I. T. Chemical Society Dinner and Meeting, Grill Room, Walker Memorial.  
8:30 P. M. — Baton Society Dance, North Hall, Walker Memorial.

## HOLD OPEN HOUSE WITH DORM DANCE

Dorm men will attend their first formal dance of the year tonight in Walker Memorial with Jack Marshard's orchestra furnishing the music for the affair. The Main Hall will be appropriately decorated for the occasion. Open House in the dormitories has also been declared by the Dormitory Board to accommodate the guests of the residents who arrive early.

The dance will last from nine until two o'clock and Open House will continue from seven to ten o'clock. The orchestra is a popular one with Technology affairs, having played at the Interfraternity Dance last spring. Jack Marshard, as an entertainer, was well received by the dorm men last year when he was drumming with Joe Smith's orchestra at the Dorm Formal.

## CAVITATION STUDIED IN HYDRAULICS LABORATORY

(Continued from page two)

a hole completely through it, or until it breaks, or until the pitting is discovered.

When looked at closely a pitted portion of metal appears as if it had been repeatedly hit with a very small cold chisel.

The purpose of the research now in progress is to investigate the nature of cavitation, and the accompanying pressure distributions, in order that cavitation may be eliminated or controlled in future machines by better design. Relative pitting effects on different kinds of metal will be studied and more detailed information will be obtained by fast moving pictures of the phenomenon.

Experimentation has disclosed that the pitting is due to bubbles in the liquid, and not from high speed spray as might be inferred from the fact that spray will cut through metals. As has been mentioned before, the pressure in the cavity is a very low one, and gases dissolved in the water at atmospheric pressure are consequently released. These gases, along with low pressure steam, form bubbles. The speed of the liquid in the section is about 100 feet per second maximum, and the bubbles, formed at practically zero pressure, are carried to a region of ordinary pressure with this speed. They collapse.

The speed at which the bubbles collapse is proportional to the pressure change per unit of distance along the path of the bubble. This is greatest, because of eddies, along the plane surface of the research apparatus. It has been found necessary to use two thicknesses of glass, because if one or more of the bubbles, which are invisible to the eye, collapses against a single thickness, the glass may break and spatter the experimenter with pieces of very wet glass.

The reason for this is the tremendous force involved in crushing a bubble at a high speed. The bubble vanishes practically instantaneously, the water rushes in, hammers the glass or metal, and there is a nice little pit. The area of a single blow is small and consequently the force concentrated on it is gigantic.

Research has disclosed that hard and brittle metals stand pitting least well. Iron will not last as long as a piece of the softer metal, brass, will. Glass will show chipping to the extent of an eighth of an inch depth over two or three inches of surface in about a half hour, whereas rubber can be used to protect turbine blades because it can bounce away from the destructive liquid blows without the slightest injury.

## COMMITTEE GIVES CAFETERIA REPORT

(Continued from page one)

6. Allow the water glasses to cool before they are used.
7. Have a light meal available at a low cost during the lunch hour. This may mean the installation of a sandwich counter where sandwiches can be made up to order.
8. Use larger dinner plates, and use sectional dinner plates.
9. Put spoons in all the sugar bowls.
10. Put ash trays on all the tables, and more than one on the round tables.
11. Have the tables cleared more frequently during rush hours.
12. Heat the vegetable dishes as well as the dinner plates.
13. Have hot rolls at lunch as well as at dinner.
14. Maintain a stack of plates to use with the hot rolls.
15. Have for sale smaller and cheaper portions of cottage cheese.
16. Make some arrangements so that the chef does not have to be called in from the kitchen to carve a slice of roast beef.
17. Make sure that no food of inferior quality, through cooking or some such factor, is put on the serving counter.
18. Have salt on all tables.
19. Install a menu board behind the counter where it can be read while one is looking at the food. Also place one at the entrance of the serving room so that it may be read while one is standing in line.
20. Put additional silverware in an accessible place.
21. Have a greater variety and more green vegetables.
22. Taste the food before it is put on the counter.

## CRITICISMS

1. Little care is taken in serving the food on the plates. Soup is spilled all over the saucer. Different articles of food are piled on top of each other on the dinner plates.
2. The plate trays are not dry when put on the rack for use.
3. The plates are not hot.
4. There is too much steam in the serving room.
5. The food is not hot.
6. The seasoning and flavor of the foods leaves much to be desired. The majority of questionnaires would indicate that the patrons like their food with more seasoning or whatever is necessary to eliminate the tastelessness of the food.
7. The soup is often greasy.
8. The milk glasses are frequently only about two-thirds full.
9. The food is generally cold at the end of the serving period.
10. There is too much cream in the creamed dishes.
11. The wooden table tops do not look clean.
12. It would seem that there was an excess of foreign matter in the food.
13. The food lacks an appetizing appearance.
14. Do not look on a new steam table as a panacea for the criticisms made.
15. A light meal costs as much as a heavy meal.
16. The attitude of the personnel of the cafeteria is not one of selling the place and the food to a prospective customer.
17. The coffee is disliked by a great many people. Perhaps Professor Prescott could be of some help in the matter of coffee.

Many of these suggestions have been acted upon, while others have come up since the last meeting with the managers of the cafeteria.

## RESULTS OBTAINED IN YESTERDAY'S ELECTION

(Continued from page one)

he prepared for Technology at Brookline High School, and at Chauncy Hall.

### Secretary Prominent in Football

William duPont the class secretary, hails from Johnstown, Pa., where he attended the Lawrenceville School. He was prominent in football and was circulation manager on the school monthly magazine, "The Lit". He was also a member of the student council. At the Webb School of California he was secretary of the Honor Committee. Taking an active part in many activities there, he secured his letters in football, basketball, tennis, and baseball. The Webb Scholarship Cup and a year's scholarship at Technology were awarded him. Here at the Institute he is out for freshman basketball.

The treasurer of the freshman class, Ford Boulware, comes from San Angelo, Texas. Before coming to Technology he went to New Mexico Military Institute, in Roswell, New Mexico, where his principal activities were football, swimming, and golf. Particularly interested in golf, he took part in the West Texas tournament in which he met the medal holder but was defeated. At Technology he was in football and is on the crew.

Hegeman, one of the men to represent the freshman class on the Executive Committee, is from Watertown. He attended Watertown High School and later Chauncy Hall, where he was chairman of the student council. His interest in athletics is chiefly in wrestling and track.

The other man elected to the Executive Committee, Kuryla is also from out of state; he hails from Las Cajas, Pachuca, Hidalgo, Mexico. He attended Staunton Military Academy where his principal activities were crew and wrestling. He also attended Exeter for two years, where he was on the senior council. At Technology he is on the freshman crew.

Johnson, one of the men selected for the Institute Committee by the freshman class, comes from Newton. At Newton High School he was captain of the track team and manager of the "Quill", the high school paper. At the Institute he is carrying on his activities in his favorite fields, working on the T. E. N. and going out for track. On Field Day he participated in the relay race. The Rotary Club of Newton awarded him a year's scholarship at the Institute.

The other representative for the Institute Committee, Driscoll, is from British Columbia. At Brentwood College his chief activities were crew, English rugby, and squash. At Technology he is particularly interested in crew, squash and hockey.

The members of the Junior Prom Committee, Humphreys, Eagan, Lucke, Kron, and Bromley are all residents of Boston during the school year except Eagan, who lives in Brockton, Mass.

The alternates are as follows: president, John R. Graham; vice-president, Robert K. Wead; secretary, C. Donald Brown; treasurer, William R. Saylor; Executive Committee, 1st, Edgar C. Rust; 2nd, William M. Benson; Institute Committee, 1st, T. L. Matthews; 2nd, Harry Easton, Jr. The alternates on the Prom Committee are G. Kingman Crosby, and Francis S. Doyle.

## SOPHOMORE CREW RECEIVES AWARDS

Members of the winning Sophomore Field Day crew were not mentioned in Wednesday's issue of THE TECH as having earned their class numerals. The following men have officially been awarded the numerals of the Class of 1935 for their work on that crew: R. A. Olsen, R. Shaw, W. H. Rothen, R. Fassoulis, J. Miller, G. P. Grant, G. Agnew, L. G. Haines (Captain), E. R. Clark, Jr., (Coxswain), and F. R. Matthews, Jr., (Manager).

## DESCRIBE NECESSITY OF GOOD FRONTIERS

### Colonel Vestal Speaks at Army Ordnance Dinner Meeting

That natural frontiers do away with the necessity of large standing armies and are helpful in international relations was stated by Colonel Curtis Vestal, head of the Military and Tactics department at the Army Ordnance dinner and meeting Tuesday evening in the Grill Room of the Walker Memorial.

In his talk "The Influence of Secure Frontiers in International Relations", Colonel Vestal outlined the best types of frontiers, and pointed out the locations of various ones in different countries by means of lantern slides. He also described the need of a nation to keep within its natural frontiers and not endeavor to expand beyond them. "Poor frontiers," Colonel Vestal said, "are the reason for our being one country. The fact that a country expands to its natural barriers," he continued, "was used by Lincoln in his arguments against secession. Few international wars have been fought in South America, not because the people are more peaceful, but because it has the best natural frontiers of any country, thus making fighting difficult."

Seas, mountains, and deserts were cited as examples of the most secure frontiers, while rivers were declared to have no value as defensive frontiers.

In conclusion Colonel Vestal said, "It is to the interest of the world that nations organize under natural frontiers."

## CUTTER TO ADDRESS INTERNATIONAL CLUB

Victor M. Cutter, member of the Technology Corporation and president of the United Fruit Company, will address the International Student Club, of which many Technology foreign students are members, on the subject, "Business as an Influence in International Relations". The meeting will be held Sunday at 5:00 P. M., at the Twentieth Century Club, 3 Joy St., Boston.

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## HEXATHLON WILL BE RUN OFF TOMORROW

(Continued from page one)

the athletes may listen to the football broadcasts while they rest between events.

### Greenlaw and Brown Favored

Some of the results of last Saturday's Interclass Meet may prove interesting and helpful in picking the possible winner in tomorrow's event. The first place winners and their times and distances were:

100-yard dash — Greenlaw, '35.  
Time 10 3-5 sec.  
220-yard dash — Greenlaw, '35.  
Time 23 sec.  
440-yard dash — Walsh, '33.  
Time 54 1-5 sec.  
880-yard run — Alden, '35.  
Time 2 min. 20 2-5 sec.  
Mile Run — Royce, '36.  
Time 5 min. 4 3-5 sec.  
Two Mile Run — Barrett, '34.  
Time 10 min. 26 sec.  
80-yard High Hurdles — Crosby, '34.  
Time 13 1-5 sec.  
150-yard Low Hurdles — Johnson, '36.  
Time 17 2-5 sec.  
Shot Put — Brown, '36.  
Distance 37 ft. 6 in.  
Discus Throw — Greenlaw, '35.  
Distance 116 ft. 6 in.  
Javelin — Dixon, '35.  
Distance 153 ft. 3 in.  
High Jump — Donnan, '36.  
Height 5 ft. 4 in.  
Broad Jump — Johnson, '36.  
Distance 21 ft. 4 in.  
Pole Vault — Triple tie among Green, '33, Dixon, '35, and Donnan, '36.  
Height 10 ft. 3 in.

The high scorer of last week's meet proved to be Alfred Greenlaw of the Sophomore class. He took firsts in the dashes and in the discus, a third in the javelin and a fourth in the shot, to amass a total of twenty points. Tom Brown, a freshman, was almost his equal, totalling nineteen. In the minds of many observers, these two athletes, although they may not fare so well in the longer running events, are the outstanding contenders for tomorrow's hexathlon championship.

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